University Institute of Engineering & Technology

(Recognised Under Section 2(f) and 12B of UGC)

Kurukshetra University, Kurukshetra

Theory Examination: FEB 2021 (Credit based)	
B.Tech. CSE	**Semester: III**

Time: 3 Hrs 15 Min

M.M. - 56

Paper: ES-205

Subject: Principles of Programming Languages

INSTRUCTIONS TO BE FOLLOWED

- **Allotted time for examination is 3 hours 15 minutes that includes time for downloading the question paper, writing answers, scanning of answer sheets and E-mailing the PDF files to the designated Email ID.**
- **For CSE-A Regular Students, the Email ID is:- btech3rdcsea@kuk.ac.in**
- **For CSE-B Regular and All Reappear Students, the Email ID is:- btech3rdcseb@kuk.ac.in**
- **The candidates will be required to attempt 75% of the question paper (maximum) by choosing to their any best questions accumulating 56 marks.**
- **The PDF files should be saved as Roll No. and Subject Code. Proper attention should be given while sending the email and in the subject line, the Roll Number and Subject Code should be mentioned.**
- **Maximum Page Limit should be 20 (Twenty) for attempting the question paper on A4 sheets which could be downloaded and printed from the sample sheets given in the Kurukshetra University Examination guidelines.**
- **Over-attemptation should be avoided.**
- **Handwriting should be neat and clean and diagrams should be clear and contrasted.**
- **The candidate should not write their Mobile No. otherwise Unfair Means Case will be made.**
- **While attempting the paper, the candidate will use blue/black pen only.**
- **Before attempting the paper, the candidate will ensure that he/she has downloaded the correct question paper. No complaint for attempting wrong question paper by the candidate will be entertained.**
- **Candidate must ensure that he/she has put his/her signature on each page of the answer sheet used by him/her. Answer sheet without the signature of the candidate will not be evaluated.**

PART-A

Q. No. 1 Answer the following questions. **15**

(i)	Define breakpoints and assertions in programming languages.	2
(ii)	Justify the importance of subprograms.	2
(iii)	Discuss coercion and casting.	2
(iv)	Examine the basic importance of static scoping.	2
(v)	Briefly explain the implicit and explicit declaration of data types.	2
(vi)	Discuss the role of exception and exception handlers in sequence control.	2
(vii)	Analyze the importance of system controlled storage management.	3

PART-B

2	With the help of diagrams, explain and compare the translation, compilation and Interpretation.	5
3	Explain the difference between row major and column major layout for contiguously allocated arrays.	5
4	How the synchronization through semaphores is achieved? Mention its advantages and disadvantages.	5
5	Recognize the role of predicate calculus in logic programming.	5

PART-C

6	Give your verdict that why it is necessary to implement and specify Characters and Enumerations in elementary data types?	10
7	Identify the factors which influence the evolution of programming languages.	10
8	How abstraction, encapsulation and generic subprograms are used for the subprograms and programmer defined data types?	10
9	Identify the roles of Union and Pointer in structured data objects. How to specify and implement Union and Pointer for structured data objects?	10
10	Why exception and exception handlers are important mechanisms during sequence control?	10
11	In what way subprogram level concurrency can be achieved to control the sequence of a program?	10
12	Explain the following: (i) Heap storage management (ii) Stack based storage management	10
13	Identify and explain various functional definitions and types of standard functions available in the functional programming language of LISP.	10